

REMARKS

Claims 1-5 and 7-15 are pending. Claims 14 and 15 are withdrawn from consideration as being drawn to a non-elected invention. By this Amendment, the specification is amended; claim 6 is canceled without prejudice or disclaimer; and claims 1 and 7-15 are amended. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Claims 7-14 (duplicate) have been amended as claims 8-15 per 37 C.F.R. § 1.126.

It is respectfully submitted that the criteria for a proper restriction between patentably distinct inventions set forth in MPEP § 803 has not been satisfied. In particular, it is respectfully submitted that the search and examination of the entire application can be made without a serious burden. For example, each of claim 1 (of Group I) recites performing a chemical oxide removal process using a process recipe including a first reactant, a second reactant, an inert gas and a process pressure in order to acquire trim amount data. Claim 14 (of Group II) recites a chemical treatment system for altering exposed surface layers on said substrate by exposing said substrate to a process recipe having an amount of a first process gas, an amount of a second process gas, an amount of an inert gas, and a process pressure.

It is respectfully submitted that regardless of which group Applicants elect, the search and examination of the entire application requires the search and examination of a process recipe having an amount of a first process gas, an amount of a second process gas, an amount of an inert gas, and a process pressure. Accordingly, it is respectfully submitted that the search and examination of the subject matter of Group I sufficiently overlaps the search and examination of the subject matter of Group II such that the entire application can be searched and examined without a serious burden.

Reconsideration and withdrawal of the restriction requirement are respectfully requested.

Claims 1-13 were rejected under 35 U.S.C. § 102(e) over Tomoyasu et al. (U.S. Patent Application Publication 2004/0185583 A1). The rejection is respectfully traversed.

Tomoyasu et al., assigned to Tokyo Electron Limited, the assignee of the instant application by way of an Assignment filed June 24, 2004, and recorded at Reel/Frame 015505/0347, does not disclose or suggest a process recipe having an amount of a first process gas, an amount of a second process gas, an amount of an inert gas, and a process pressure, as recited in claim 1.

As disclosed in paragraphs [0200] – [0206], the gas distribution system 1260 of the chemical treatment system 1220 distributes a process gas comprising two gases, for example NH₃, HF, H₂, O₂, CO, CO₂, Ar, He, etc. It is clear that the gas distribution assembly 1422, including the first gas distribution plate 140 and the second gas distribution plate 1432, is not configured to distribute a first process gas, a second process gas, and an inert gas. Nor is there any disclosure or suggestion by Tomoyasu et al. of using inert gas to control the amount of trim that is removed. Therefore, Tomoyasu et al. can not anticipate or render obvious claim 1.

Claims 2-5, 7-12 recite additional features of the invention and are allowable for the same reasons discussed above with respect to claim 1 and for the additional features recited therein.

Claim 13 recites a method for performing a chemical oxide removal process using a process recipe to achieve a target trim amount of a feature on a substrate comprising, inter alia, determining a relationship between trim amount data and a partial pressure of a gas specie and an inert gas for said process recipe. There is no disclosure or suggest by Tomoyasu et al. of determining a relationship between trim amount data and a partial pressure of a gas specie and an inert gas for said process recipe. As discussed above, Tomoyasu et al. do not disclose or suggest the use of an inert gas in a chemical oxide removal process for removing a trim amount. Reconsideration and withdrawal of the rejection of claims 1-13 over Tomoyasu et al. are respectfully requested.

Claims 1-3 and 6-13 were rejected under 35 U.S.C. § 103(a) over Natzle et al. (U.S. Patent Application Publication 2004/0097047 A1) and claims 4 and 5 were rejected under 35 U.S.C. § 103(a) over Natzle et al. in view of Doris et al. (U.S. Patent Application Publication 2004/0241981 A1). The rejections are respectfully traversed.

The Examiner acknowledges on page 6, lines 10-15, that Natzle et al. do not disclose or suggest the use of inert gas with process gas (i.e. etchant), but takes Official Notice that such use is well-known and alleges that one of ordinary skill in the art would have found it obvious to incorporate inert gas to provide its art recognized advantages and expected results.

In accordance with MPEP § 2144.03, Applicants respectfully request the Examiner to provide documentary evidence in the next Office Action, or withdraw the rejection.

It is respectfully submitted that the use of inert gas with process gas in a chemical oxide removal process to remove a trim amount is not well-known, i.e. capable of such instant and unquestionable demonstration as to defy dispute. It is further respectfully submitted that even assuming it is well known, there is no motivation or suggestion, by

Natzle et al, or in the knowledge generally available to one of ordinary skill in the art, to combine such knowledge with Natzle et al. Natzle et al. clearly disclose in paragraph [0051], it is the adjustment of the amount of HF and NH₃ that allows the shaping of the curved silicon oxide 18, not the introduction of an inert gas.

Claims 2-5 and 7-12 recite additional features of the invention and are allowable for the same reasons discussed above with respect to claim 1 and for the additional features recited therein. It is further respectfully submitted that Doris et al. fail to cure the deficiencies of Natzle et al. with respect to claim 1, and 13 and that even assuming it would have been obvious to combine the references, which Applicants do not concede, such a combination would not include all the claim limitations and would not present a *prima facie* case of obviousness.

Reconsideration and withdrawal of the rejections over Natzle et al. and Natzle et al. in view of Doris et al. are respectfully requested.

In view of the above amendments and remarks, Applicants respectfully submit that all the claims are allowable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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